has also studied new systems of linear groups in which the Galois field has been employed *ab initio*.

The aim of the present volume seems to be to give a systematic presentation of these results, together with the necessary theorems from the known parts of mathematics. Comparatively little knowledge is presupposed on the part of the reader, but the generality of the methods calls for considerable maturity and training. It is to an unusual extent the work of the author, and is a credit not only to him, but also to all the mathematicians of our country. We predict for it a place among the few American works on mathematics which are known and respected by the leading mathematicians of the world.

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SCIENTIFIC JOURNALS AND ARTICLES.

The Botanical Gazette for June contains the following papers: Mr. A. Rimbach has recorded a series of physiological observations on the subterranean organs of ten Californian species of Liliaceæ. Although they are geophilous herbs of similar organization, they show very different modes of self-burial. The plants studied are grouped on the basis of these methods. Mr. Ralph E. Smith has studied 'The Parasitism of *Botrytis cinerea*,' and has come to the conclusion that too much importance has been ascribed to a cellulose-dissolving enzyme. The two stages in the process are a poisoning and a killing of the cells, and their disintegration and utilization as food by the fungus. The first effect seems to be produced by a substance, probably oxalic acid, formed by the fungus as a by-product of its metabolism. Following this a number of different enzymes are secreted that digest the various constituents of the tissues. Mr. Charles H. Shaw has published a study of 'The Development of Vegetation in the Morainal Depression in the Vicinity of Wood's Hole.' In open pools anchored plants with floating leaves are often confined to a zone somewhat separated from the shore, their approach to the shore line being prevented by the sweeping in of silt. The vegetation of the large open morainal pools, though undrained, may be purely hydrophilous, but about the time of the formation of the floating mat the conditions appear to become xerophytic. The marginal ditch which surrounds pond islands and atolls is formed only in the woods, where a dense felt of humus vegetation protects the ground from erosion. Fallen leaves and other organic materials swept from the forest tend to smother the vegetation which might grow there. In this way there is produced a belt of open water surrounding an island, or ring of vegetation. Mr. G. E. Webb has published a 'Morphological Study of the Flower and Embryo of *Spiræa*.' Some of the conclusions are as follows: The order of floral development is sepals, inner stamens, carpels, outer stamens, petals; no archesporial cell or plate of archesporial cells is differentiated in the microsporangium; the tapetum is cut off from the outside of the archesporial mass; several archesporial cells are differentiated in the megasporangium. Mr. David G. Fairchild describes a precocious poplar branch observed in Patras, Greece, and suggests the possibility of using such precocity in the production of earlier developing varieties of shade or fruit trees. Mr. E. Mead Wilcox records observations on the numerical variation of the ray flowers of *Helianthus annuus*.

DISCUSSION AND CORRESPONDENCE.

A METHOD OF FIXING THE TYPE IN CERTAIN GENERA.

IN view of certain recent discussions* as to the proper means of fixing the types of genera of early authors, when no type was specified, we believe the differences of opinion arising under existing codes of nomenclature will be materially lessened by the adoption of the following rule:

* See *Cambridge, Ann. & Mag. Nat. Hist.*, 7th Ser., VIII., pp. 403–414, November, 1901; ibid., 7th Ser., IX., pp. 5–20, January, 1902; Jordan, SCIENCE, N. S., XIII., pp. 498–501, March 29, 1901; Allen, *Bull. Am. Mus. Nat. Hist.*, XIV., pp. 325–334, November 12, 1901; Howell, *Proc. Biol. Soc. Wash.*, XV., pp. 1–9, February 18, 1902; Allen, *Proc. Biol. Soc. Wash.*, XV., pp. 59–66, March 22, 1902; Cook, SCIENCE, N. S., XV., pp. 647–649.